

WHAT IS CLAIMED IS:

1. A method for operating a gas turbine engine, said method comprising:

channeling compressed air from the gas turbine engine to a noise suppression system; and

selectively operating the noise suppression system such that air discharged from the noise suppression system generates a flow control mechanism in the gas turbine exhaust flowpath.

2. A method in accordance with Claim 1 wherein selectively operating the noise suppression system further comprises selectively operating the noise suppression system such that air discharged from the noise suppression system facilitates reducing gas turbine noise generated during engine operation.

3. A method in accordance with Claim 1 wherein the noise suppression system includes a manifold and a plurality of tubes coupled to the manifold, wherein channeling compressed air from the gas turbine engine to a noise suppression system further comprises:

channeling compressed air from the gas turbine engine into the manifold; and

discharging the air from the manifold into a core engine exhaust stream through the plurality of tubes.

4. A method in accordance with Claim 3 wherein the noise suppression system includes an actuation valve, wherein channeling compressed air from the gas turbine engine to a noise suppression system further comprises selectively operating the actuation valve to channel compressed air from the gas turbine engine to the manifold.

5. A method in accordance with Claim 3, wherein the plurality of tubes includes a plurality of pair of tubes including a first tube and a second tube, wherein discharging air from the manifold further comprises orienting the first tube and the second tube such that air discharged from the plurality of tubes generates a vortex in the gas turbine exhaust flowpath.

6. A method in accordance with Claim 3 wherein said discharging air from the manifold further comprises discharging air from the manifold into a core gas turbine engine nozzle exhaust flowpath.

7. A method in accordance with Claim 1 wherein said discharging air from the manifold further comprises discharging air from the manifold into a fan nozzle exhaust flowpath.

8. An assembly for a gas turbine engine, said assembly comprising:

a gas turbine nozzle; and

a noise suppression system coupled to said gas turbine nozzle, said noise suppression system is selectively operable to facilitate generating a plurality of flow control mechanisms in said gas turbine nozzle flowpath.

9. An assembly in accordance with Claim 8 wherein said noise suppression system further comprises:

a manifold coupled to said gas turbine nozzle; and

a plurality of tubes coupled to said manifold, each said tube is selectively oriented to facilitate generating a vortex in said gas turbine nozzle flowpath.

10. An assembly in accordance with Claim 9 wherein said plurality of tubes comprise at least a first tube that extends radially inward at an angle  $\beta$  with respect to a centerline axis, and a second tube that extends radially inward at the angle

$\beta$  with respect to the centerline axis, said first tube and said second tube separated by an angle  $\theta$ .

11. An assembly in accordance with Claim 9 wherein said plurality of tubes are oriented to facilitate generating a vortex in a core gas turbine engine nozzle flowpath.

12. An assembly in accordance with Claim 9 wherein said plurality of tubes are oriented to facilitate generating a vortex in a fan nozzle flowpath.

13. An assembly in accordance with Claim 8 wherein said noise suppression system further comprises:

a manifold coupled to said gas turbine nozzle; and

a plurality of tube pairs coupled to said manifold, each said tube pair is selectively oriented to facilitate generating a vortex in said gas turbine nozzle flowpath.

14. An assembly in accordance with Claim 8 wherein said noise suppression system further comprises an actuation valve selectively operable to discharge compressed air from said gas turbine engine to said noise suppression system.

15. A gas turbine engine comprising:

a core engine;

a fan nozzle; and

a noise suppression system coupled to at least one of said core engine nozzle and said fan nozzle, said noise suppression system is selectively operable to facilitate generating a plurality of flow control mechanisms in at least one of a core engine nozzle exhaust flowpath and a fan nozzle exhaust flowpath.

16. A gas turbine in accordance with Claim 15 wherein said noise suppression system further comprises:

a manifold coupled to said gas turbine nozzle; and

a plurality of tube pairs coupled to said manifold, each said tube pair is selectively oriented to facilitate generating a vortex in said gas turbine nozzle flowpath.

17. A gas turbine in accordance with Claim 16 wherein each of said plurality of tube pairs comprises:

a first tube that extends radially inward at an angle  $\beta$  with respect to a centerline axis; and

a second tube that extends radially inward at the angle  $\beta$  with respect to the centerline axis, said first tube and said second tube separated by an angle  $\theta$ .

18. A gas turbine in accordance with Claim 16 wherein each of said plurality of tube pairs is selectively oriented to facilitate generating a vortex in at least one of said core gas turbine engine nozzle flowpath and said fan nozzle flowpath.

19. A gas turbine in accordance with Claim 16 wherein said noise suppression system further comprises:

a manifold coupled to said gas turbine nozzle; and

exactly eight tube pairs coupled to said manifold, each said tube pair is selectively oriented to facilitate generating a vortex in said gas turbine nozzle flowpath.

20. A gas turbine in accordance with Claim 15 wherein said noise suppression system further comprises an actuation valve selectively operable to discharge air from said gas turbine engine into said noise suppression system during at least one of a continuous operation mode and a pulsed operation mode of said noise suppression system.